

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 April 2004 (15.04.2004)

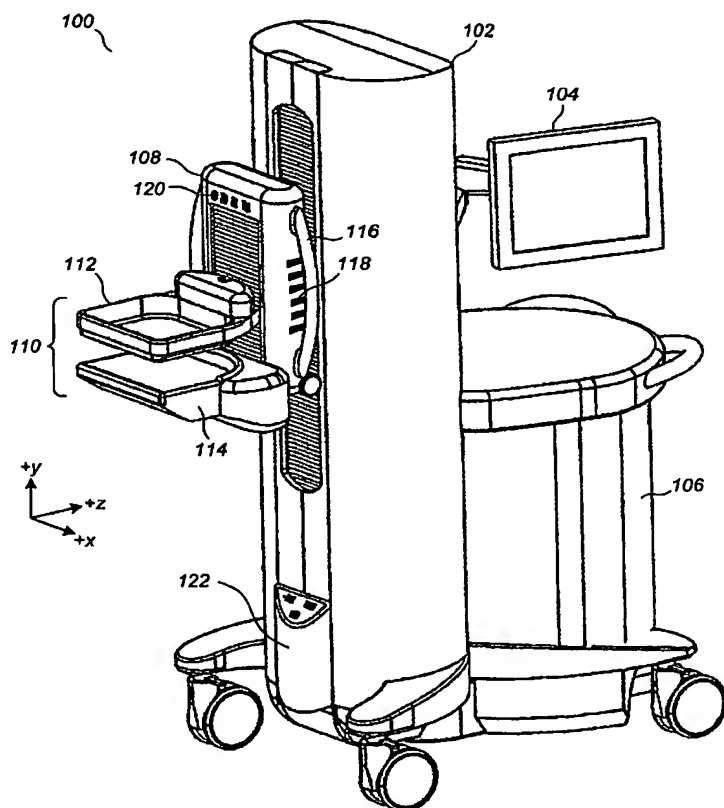
PCT

(10) International Publication Number
WO 2004/030523 A3

- (51) International Patent Classification⁷: **A61B 8/00**
- (71) Applicant (for all designated States except US): U-SYS-TEMS, INC. [US/US]; 110 Rose Orchard Way, San Jose, CA 95134 (US).
- (21) International Application Number: PCT/US2003/031434
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): ANDERSON, Tor, C. [US/US]; 2447 Alvin Street, Mountain View, CA 94043 (US). HAUTALA, Reino, E. [US/US]; 4121 Campana Drive, Palo Alto, CA 94306 (US). CHIN, Donald [US/US]; 758 Christine Drive, Palo Alto, CA 94303 (US). MAR, Janet, B. [US/US]; 841 Darien Way, San Francisco, CA 94127 (US). YU, Zengpin [US/US]; 3434 Waverley Street, Palo Alto, CA 94306 (US).
- (22) International Filing Date: 1 October 2003 (01.10.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
- | | | |
|----------------|-------------------------------|----|
| 60/415,385 | 1 October 2002 (01.10.2002) | US |
| 10/305,661 | 27 November 2002 (27.11.2002) | US |
| 10/305,936 | 27 November 2002 (27.11.2002) | US |
| 60/429,728 | 27 November 2002 (27.11.2002) | US |
| 60/439,437 | 9 January 2003 (09.01.2003) | US |
| PCT/US03/17312 | 30 May 2003 (30.05.2003) | US |
| 60/480,095 | 20 June 2003 (20.06.2003) | US |
- (74) Agents: KAVRUKOV, Ivan, S. et al.; Cooper & Dunham LLP, 1185 Avenue of the Americas, New York, NY 10036 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR FULL-FIELD BREAST ULTRASOUND SCANNING



(57) Abstract: A full-field breast ultrasound (FFBU) scanning apparatus (100) and related methods are described for compressing and ultrasound scanning a breast. The scanning apparatus comprising a gantry (108) that supports a breast compression and scanning assembly (110), a compression assembly (112), and a scanning assembly (114). The scanning assembly (114) comprises a frame (214) having a taut film sheet (216) extending thereover. A transducer translation mechanism holds a transducer surface against a second surface of the film sheet (216) while translating the transducer thereacross to scan the breast. A liquid coupling agent recycling station is coupled to the scanning assembly (114) via appropriate irrigation system.



GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

- (84) **Designated States (regional):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

- (88) **Date of publication of the international search report:**
12 August 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/31434

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61B 8/00
US CL : 600/437

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 600/407-472; 128/916

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,474,072 A (Shmulewitz) 12 December 1995 (12.12.1995), See entire document.	1-20
A, T, E	US 6,682,484 B1 (Entrekin et al.) 27 January 2004 (27.01.2004), See entire document.	1-20

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"B" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

08 June 2004 (08.06.2004)

Date of mailing of the international search report

23 JUN 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Ali Imam

Telephone No. 703-308-1148

INTERNATIONAL SEARCH REPORT

PCT/US03/31434

Continuation of B. FIELDS SEARCHED Item 3:

EAST

search terms: ultrasound, mammogram, breast, reservoir, irrigation, coupling agent, transducer